

## Preface

In 2016 the International Scientific-Practical Conference “Modern information technology and IT-education” (SITITO’2016) was held on November 25 – 26 at the Moscow State University by M. V. Lomonosov Faculty of Computational Mathematics and Cybernetics. The series of scientific events relevant to the priority directions of development of science, technology and engineering in the Russian Federation in the major modern interdisciplinary field – information and telecommunication systems – which brings together representatives from Mathematics, Informatics, Physics and Materials Science, Computer Science, Data Science and Humanities from Russia and foreign countries.

The conference were held within the scope of the activities of the Federal educational-methodical Association in the system of higher education in the enlarged group of specialties and areas of training 02.00.00 Computer and Information Sciences.

The conference SITITO’2016 is designed to integrate the efforts of the academic community and experts from different countries in order to improve the efficiency of research and development of scientific and technological potential of IT in science, technology, economics, and training of scientific personnel.

Traditionally, the conference SITITO’2016 is attended by hundreds of the most active in research and teaching representatives of higher-education teaching personnel, undergraduate and graduate students, representatives of the IT industry. For the duration of the conferences there was gathered a rich collection of scientific works of the conference participants that reflects the history of the development of IT and IT-education system. Currently the Conference is widely known both in Russia and abroad. The number of its participants is growing, and the quality of research papers is enhancing.

The conference SITITO’2016 were attended by about 400 people. The conference Program Committee has reviewed 230 submissions and accepted of them 131 as full papers, 53 as short papers, 7 as posters, 4 as demos, whereas 35 submissions were rejected. According to the conference program, these 184 oral presentations (of the full and short papers) are structured into 8 sessions including IT-education: methodology, methodological support, E-learning and IT in Education, Educational resources and best practices of IT-Education, Research and development in the field of new IT and their applications, Scientific software in education and science, School education in computer science and ICT, Economic Informatics, Innovative Information and Pedagogical Technologies in IT-Education. Most of the presentations are dedicated to the results of researches conducted in the research organizations located on the territory of the Russian Federation including Chelyabinsk, Dolgoprudny, Dubna, Ekaterinburg, Irkutsk, Kazan, Kostroma, Moscow, Nizhny Novgorod, Novosibirsk, Obninsk, Omsk, Orenburg, Perm, Ryazan, Saint Petersburg, Samara, Saratov, Togliatti, Tomsk, Tula, Tver, Tyumen, Ufa, Veliky Novgorod, Voronezh, Yaroslavl, Yelets and foreign countries Belarus (Minsk, Grodno), Bulgaria (Sofia), Kazakhstan (Astana, Almaty), Ukraine (Donetsk, Sumy), Uzbekistan (Tashkent). The conference were attended by leading experts and teams from research centers, universities, IT industry, institutes of the Russian Academy of Sciences, Russian high-tech companies and from the near and far abroad countries.

Besides the above, the conference contains also the following satellite events: summing up the results of the VI International Internet-Conference-Competition " Innovative Information and Pedagogical Technologies in IT Education " - IP-2016. Workshop containing 4 presentations; an open workshop “Economy 4:0 requirements for digital competencies and personnel training system sought”, including three round tables with the discussions of business models, mobile technologies, as well as two master classes entitled as “Robotics Education” and “Tunneling Technology and firewall”. Video conferences under the title “Modern Training Courses and Manuals”. Round Table Discussions on topical issues of IT-

Education. This workshop is prepared according to the initiative of Vladimir Sukhomlin (Lomonosov Moscow State University; Institute of Informatics Problems, Federal Research Center "Computer Science and Control", Moscow, Russia).

184 proceedings were published in three editions of scientific collection "Modern information technology and IT-education" in the electronic collection of scientific conference proceedings, with a total of more than 1,500 pages.

All scientific proceedings presented at the conference were prior reviewed by the expert council and a further public discussion of the results took place on the Breakout Sessions. First of all review and selection of articles for publication in the collections of scientific papers gave an assessment of content, execution style, scientific-practical and applied value of the work, and took into account the interests of the development of the following areas: methodology, methodological support of IT-education, e-learning and IT -education, educational resources and best practices of IT education, research and development in the field of new IT and its applications, scientific software in science and education, school education in computer science and ICT, economic informatics, information and innovative pedagogical technologies in IT education.

Traditionally, the editorial staff and the editorial board of scientific journals are working harmoniously. Taking into consideration that our publication combines Scientific-Practical specialized institutes of Russia and the CIS and foreign countries, the editorial board and the board include the leading experts residing in different regions of the world.

The chairs of the Program Committee and Organizing Committee of SITITO'2016 express their gratitude to Elena Zubareva for the effective interactions by the CMT system with the authors of submissions and with the PC members reviewing the submissions, as well as for preparing a layout of the conference proceedings during the process of its publishing. The chairs of PC also express their gratitude to the PC members for carrying out the reviewing of the submissions and selection of the papers for presentation, as well as to Tatyana Gubina for keeping of the up-to-date content of the conference site at all stages of the conference preparation.

The Moscow State University by M.V. Lomonosov in which the conference was held is a major traditional educational institution in Russia, it offers training in almost all branches of modern science and humanities. Providing an up-to-date infrastructure, convenient logistics, historical and natural attractions, the venue contributed to the organization of the SITITO conference on a high standard.

The chairs of the Organizing Committee and Program Committee of SITITO'2016 express their gratitude to the authors of the submissions as well as to the Internet Initiatives Development Fund (Russian), Foundation for Promotion of Internet media, IT education, human development "League Internet Media" (Russian), LANIT group of companies (Russian), CJSC INLINE GROUP (Russian), D-Link Corporation (Russian) for the financial support to the Conference.

**Co-chair of the Program committee**

Vladimir A. Sukhomlin  
(MSU; FRC CSC RAS)

Elena V. Zubareva  
(MSU; ELSU)

Manfred Shneps-Shneppe  
(VUC)

**Co-chair of the Organizing committee**

Victor N. Zakharov  
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